



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W., SUITE 2900  
 ATLANTA, GEORGIA 30323

Report Nos.: 50-424/87-04 and 50-425/87-04

Licensee: Georgia Power Company  
 P. O. Box 4545  
 Atlanta, GA 30302

Docket Nos.: 50-424 and 50-425

License Nos.: CPPR-108 and CPPR-109

Facility Name: Vogtle 1 and 2

Inspection Conducted: January 5-9, 1987

Inspector:	<u>J. J. Blake</u>	<u>1/27/87</u>
	R. W. Newsome	Date Signed
Approved by:	<u>J. J. Blake</u>	<u>1/27/87</u>
	J. J. Blake, Section Chief	Date Signed
	Division of Reactor Safety	

SUMMARY

Scope: This routine, unannounced inspection involved the areas of construction nondestructive examination (NDE) Unit 2, inspector identified items, general observation of construction activities, general housekeeping, and material storage.

Results: No violations or deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*R. E. Conway, Senior Vice President/Project Director, Vogtle Project
- \*P. D. Rice, Vice President, Vogtle Project
- \*E. D. Groover, Quality Assurance (QA) Manager - Construction
- \*C. W. Hayes, Vogtle QA Manager
- \*G. A. McCarley, Project Compliance Coordinator
- H. Swain, Mechanical Quality Control (QC) Section Supervisor

Other licensee employees contacted included construction craftsmen, engineers, technicians, mechanics, security force members, and office personnel.

#### Other Organizations

- J. E. Miller, QA Manager, Pullman Power Products (PPP)
- R. Davis, Assistant QA Manager, PPP
- J. Steel, Nondestructive Examination (NDE) Supervisor, PPP
- J. Pruitt, Supervisor, Nuclear Installation Services Company (NISCO)
- H. Brumitt, Training Officer, PPP
- T. Fry, QA Manager, Pullman/Kenith-Fortson (P/K-F)

#### NRC Resident Inspector

- \*H. H. Livermore, Senior Resident Inspector - Construction

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on January 9, 1987, with those persons indicated in the above paragraph. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

### 3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Deviation 50-424/86-56-01, 50-425/86-25-01: Failure to Revise FSAR as Committed. Amendment No. 25 to Figure 9.4.1-2, Sheets 1 and 3 of 3, was issued on September 19, 1986, revising the FSAR as committed by the licensee. Additionally, responsible engineering personnel have been reinstructed in the project procedures governing FSAR change

controls and in ensuring that commitments made in response to USNRC concerns are concurred with by other affected organizations. The inspector has no further questions regarding this matter.

- b. (Closed) Unresolved Item 50-424/86-129-01, 50-425/86-59-01: "Visual Activity Examiner Qualification." This item was initiated as a result of the licensee being unable to provide objective quality evidence supporting the qualification of certain licensee personnel to administer visual acuity examinations to NDE examiners. This inspector has reviewed a memo written by the licensee's Corporate NDT Administrator which indicated that as of April 1980, all examiners were trained and/or qualified and endorsed to administer eye examinations. The inspector has no further questions regarding this matter.

#### 4. Unresolved Items

Unresolved items were not identified during this inspection.

#### 5. Independent Inspection Effort

##### Construction Progress

The inspector conducted a general inspection of Unit 2 containment, auxiliary buildings, fabrication areas, and material storage areas to observe construction progress and construction activities such as welding, material handling and control, housekeeping and storage.

Within the areas examined, no violations or deviations were identified.

#### 6. Construction Nondestructive Examination (NDE) Unit 2

The inspector reviewed procedures, conducted examinations, observed examinations, and reviewed records for various NDE methods, as indicated in the following sub-paragraphs, to determine whether NDE activities were being accomplished in accordance with the applicable code and regulatory requirements. The applicable code is the American Society of Mechanical Engineers Boiler and Pressure Vessel (ASME B&PV) Code, Section III, 1977 Edition, Winter 1977 Addenda. The nondestructive examinations were being conducted by Pullman Power Products (PPP), Nuclear Installation Services Company (NISCO), and Pullman/Kenith-Fortson (P/K-F) for the licensee.

- a. Visual Examination Procedure Review/Work Observation/Record Review (57050)

##### (1) Procedure Review

The inspector reviewed the below listed procedures to ascertain whether they were issued and qualified in accordance with the licensee's quality assurance program. The procedures were also reviewed to determine whether they contained sufficient instructions to assure that the following parameters were specified and

controlled within the limits permitted by the applicable code, standard, or any additional specification requirement: method - direct visual, remote visual or translucent visual; application - hydrostatic testing, fabrication procedure, visual examination of welds, leak testing, etc.; how visual examination is to be performed; type of surface condition available; method or implement used for surface preparation, if any; whether direct or remote viewing is used; special illumination, instruments, or equipment to be used, if any; sequence of performing examination, when applicable; data to be tabulated, if any; acceptance criteria is specified and consistent with the applicable code section or controlling specification; and report form completion.

<u>Procedure</u>	<u>Title</u>	<u>Revision</u>
(NISCO) ES-100-5	Visual Inspection of Welds	3-26-86 (Rev. E)
(P/K-F) JP-10.2	Welding Inspection	1-21-86 (R13)

(2) Work Observation

- (a) The inspector observed visual examinations being performed by P/K-F on the welds listed below. These observations were made to: determine whether the applicable drawing, instructions or travelers clearly specify the test procedure to be used and that a copy of the procedure is available in the area where the work is being performed, identify for record review the personnel performing the examination and ascertain whether they are qualified to perform the assigned tasks; determine whether the required tools and examination aids (as specified in the examination procedure) are available at the work location; determine whether the specific areas, locations and extent of examination are clearly defined; determine whether the test attributes are as specified in the applicable test procedure; ascertain whether the defects are evaluated in accordance with the procedure requirements, correct acceptance criteria is used and the inspection results are reported in a prescribed manner.

<u>Item</u>	<u>Drawing No.</u>	<u>Weld I.D.</u>
DS-209B126-45	2-1561-N7-001/002	1 thru 6
211B103-315	2-1532-A7-001	8 and 13

- (b) The inspector performed verification visual examinations on the below listed randomly selected PPP completed Unit 2 welds using measuring devices provided by the Nuclear Regulatory Commission's Region II office. The examinations were performed to ascertain whether the correct acceptance criteria was used and that the inspection results were reported in a prescribed manner consistent with controlling specifications and procedures.

Weld IdentificationDrawing No.

497-W-731  
497-W-729  
497-W-727

2J3-1208-497-01  
2J3-1208-497-01  
2J3-1208-497-01

## (3) Records Review

- (a) The inspector reviewed two P/K-F visual examination personnel qualification records to ascertain whether these records properly reflect the employer's name, person certified, activity qualified to perform, effective period of certification, signature of employer's designated representative, basis used for certification, and annual visual acuity, color vision examination and periodic recertification.
- (b) The inspector reviewed the examination reports for the below listed Unit 2 welds to determine compliance with procedure requirements for examination records.

<u>Support No.</u>	<u>P/K-F</u> <u>Drawing No.</u>	<u>Weld I.D.</u>
DS-209B126-45	2-1561-N7-001/002	1 thru 6
211B103-315	2-1532-A7-001	8 and 13

## b. Magnetic Particle Examination Procedure Review/Work Observation/Record Review (57070)

## (1) Procedure Review

The below listed PPP and NISCO magnetic particle NDE procedures were reviewed by the inspector to ascertain whether essential examination variables are defined and whether these variables are controlled within the limits specified by the applicable code and other specification requirements.

<u>Procedure No.</u>	<u>Title</u>	<u>Latest Rev. Date</u>
NISCO ES 100-1	Magnetic Particle Inspection (Dry Powder)	Rev. 1 08/23/82
PPP IX-MT-1-W77	Magnetic Particle Examination Procedure Continuous Prod Method, Winter 1977 Addenda	09/28/84 w/PCN #1

In addition to the above review, the procedures were analyzed in the area of technical content relative to magnetizing method, surface preparation, magnetic particle contrast, surface temperature, light intensity, coverage, prod spacing, magnetizing current, yoke pole spacing and acceptance criteria.

## (2) Work Observation

Observation of magnetic particle examinations was confined to those being performed by PPP examination personnel due to the absence of magnetic particle examinations being performed by NISCO during this inspection period. The welds identified below were examined by PPP examination personnel and observed by the inspector.

<u>ISO/Drawing No.</u>	<u>Weld I.D.</u>	<u>Size</u>
2K3-1592-044-05	109-W-10A	4"
2K3-1203-055-01	055-W-05A	14"
2K5-2403-044-01	044-W-02	4"

## (3) Record Review

- (a) A review of qualification records, as listed below, for PPP magnetic particle examination personnel was accomplished to determine whether the qualification records properly reflect the employer's name, person certified, activity qualified to perform, level of qualification, effective period of certification, signature of employer's designated representative, basis used for certification, annual visual acuity, color vision examination, and periodic recertification.

<u>Examiner</u>	<u>Level</u>
WHB	II
VAS	II
JSB	II
ERS	II
GLS	II
ROS	II (Terminated 2/20/86)
RLD	II (Terminated 3/18/86)

- (b) The inspector reviewed the magnetic particle examination reports for the below listed welds to determine compliance with procedure requirements for examination records.

<u>Weld No.</u>	<u>Drawing No.</u>	<u>System</u>
010-W-03A	2K3-1217-010-01	Aux. Comp. Cooling Water
010-W-03B	2K3-1217-010-01	Aux. Comp. Cooling Water
010-W-04	2K3-1217-010-01	Aux. Comp. Cooling Water
010-W-04A	2K3-1217-010-01	Aux. Comp. Cooling Water
010-W-05	2K3-1217-010-01	Aux. Comp. Cooling Water
010-W-06	2K3-1217-010-01	Aux. Comp. Cooling Water

<u>Weld No.</u> (Continued)	<u>Drawing No.</u>	<u>System</u>
020-W-01	2K3-1203-047-02	Comp. Cooling Water
047-W-04	2K3-1203-047-02	Comp. Cooling Water
047-W-07	2K3-1203-047-02	Comp. Cooling Water
047-W-09	2K3-1203-047-02	Comp. Cooling Water
055-W-05A	2K3-1203-055-01	Comp. Cooling Water
010-W-05	2K5-1301-010-01	Main Steam
010-W-07	2K5-1301-010-01	Main Steam
010-W-09	2K5-1301-010-01	Main Steam
018-W-03	2K5-1302-018-01	Aux. Feedwater
018-W-03A	2K5-1302-018-01	Aux. Feedwater
084-W-01	2K5-2403-084-01	Diesel Generator
084-W-03	2K5-2403-084-01	Diesel Generator
044-W-02	2K5-2403-044-01	Diesel Generator
109-W-10A	2K5-1592-044-05	Essential Chilled Water

- (c) The above listed welds were MT examined using alternating current (AC) yokes. The inspector reviewed documentation indicating that lift tests had been performed on the below listed AC yokes.

Yoke I.D.

B-7A-2  
B-7A-3  
B-7A-5  
B-7A-6  
B-7A-7

The inspector reviewed the documentation for lift test plate B-30-2 which was used to conduct the lift tests on the above AC yokes.

c. Ultrasonic Examination Procedure Review (57080)

The below listed ultrasonic examination procedure was reviewed to ascertain whether the procedure contains sufficient information to assure that all essential parameters are specified and controlled within the limits permitted by the applicable code or specification requirements.

<u>Procedure No.</u>	<u>Title</u>	<u>Latest Rev. Date</u>
PPP X-20	Ultrasonic Thickness Measurement of Materials	10-22-86

In addition to the review above, the procedure was analyzed in the areas of technical content relative to type of apparatus to be used including frequency range as well as linearity and signal attenuation accuracy requirements; extent of coverage (beam angles, scanning surface, scanning rate and directions) as well as the scanning technique; calibration requirements, methods and frequency including the type, size, geometry, and material of calibration blocks as well as location and size of calibration reflectors within the block; the sizes and frequencies of search units specified and that they are consistent with the applicable requirements; methods of compensation for the distance traversed by the ultrasonic beam as it passes through the material including distance - amplitude correction and transfer mechanism; examination reference level for monitoring discontinuities and the scanning gain setting is specified and that these values are in accordance with applicable requirements; the methods of demonstrating penetration and coverage are established; the levels or limits for evaluation and recording of indications are specified and are in accordance with applicable requirements; the method of recording significant indications and that the reporting requirements are in accordance with applicable requirements; and the acceptance limits are in accordance with the applicable requirements.

d. Liquid Penetrant Examination Review/Work Observation/Records Review (57060)

(1) Procedure Review

The below listed PPP and NISCO liquid penetrant procedures were reviewed by the inspector to ascertain whether essential examination variables are defined and whether these variables are controlled within the limits specified by the applicable Code and other specification requirements.

<u>Procedure No.</u>	<u>Title</u>	<u>Latest Rev. Date</u>
PPP IX-PT-1-W77	Penetrant Examination Procedure to ASME Section III Winter 1977 Addenda	7-22-85
NISCO ES 100-2	Liquid Penetrant Examination	7-23-84 (R-E)

In addition to the review above, the procedures were reviewed in the area of technical content relative to specified test method requirements; brand names and specific types (number or letter designation, if available) of penetrant, penetrant remover, emulsifier and developer; penetrant materials used are analyzed for sulfur and total halogens; methods for acceptable pre-examination of surface preparation and surface area to be examined is



consistent with applicable Code requirements; establishing a minimum drying time following surface cleaning, method of penetrant application and the penetration (dwell) time are specified; examination surface temperature is specified; methods for removal of solvent removable penetrant are specified; method and time of surface drying prior to developing are specified; type of developer is specified; method of developer application and the time interval between penetrant removal and developer application are specified; final interpretation is performed within the range of 7-30 minutes after developer application; minimum light intensity at the inspection site is prescribed; technique for evaluation of indications is specified, acceptance standards are included and these are consistent with applicable Code and specification requirements; reporting requirements are specified; and procedure requalification is required when critical element changes are necessary.

(2) Work Observation

- (a) The inspector observed liquid penetrant examinations being performed by PPP examiners on the below identified completed welds.

<u>Weld No.</u>	<u>Drawing No.</u>	<u>System</u>
497-W-728*	2J3-1208-497-01	Chem. & Volume Cont.
497-W-730	2J3-1208-497-01	Chem. & Volume Cont.
499-W-717*	2J3-1208-499-01	Chem. & Volume Cont.

\*These welds were reinspected by liquid penetrant after the initial examination due to penetrant bleed-out in some localized areas on the welds. Reinspection identified the initial bleed-out area as non-relevant indications.

- (b) Observation of the liquid penetrant examinations performed on the above listed welds was accomplished by the inspector in order to: determine whether the applicable drawings, instructions or travelers clearly specify the test procedure to be used and whether a copy of the procedure was available in the work area; determine whether the sequencing and timing of the examination relative to the other operations such as grinding, welding, or heat treating were specified and are in accordance with applicable code and specification requirements; determine whether the required equipment and materials are at the work station; determine whether the specific areas, locations, and extent of examination are clearly defined; determine whether penetrant type, penetrant application method, penetration time (dwell time), temperature of item surface, penetrant removal, item surface drying, developer application, developing time, and examined surfaces

are cleaned at the conclusion of the examination in accordance with the applicable procedure requirements; and to determine whether any revealed indications were evaluated at the proper time in accordance with procedure requirements and that correct acceptance criteria was used and the results were reported in the prescribed manner.

(3) Records Review

- (a) The inspector reviewed the examination records for the above listed welds to determine compliance with procedure requirements for examination records.
- (b) A review of qualification records, for two liquid penetrant examination personnel, was accomplished to determine whether the qualification records reflect the employee's name, person certified, activity qualified to perform, level of qualification, effective period of certification, signature of employees designated representative, basis used for certification, annual visual acuity, color vision examination, and periodic recertification.
- (c) The below listed liquid penetrant materials were used to perform the examinations listed above and certification records were reviewed to ascertain if the sulfur and halogen content of the materials were within acceptable content requirements.

<u>Material</u>	<u>Batch Nos.</u>
Liquid Penetrant	85E050
Penetrant Remover	85J058
Developer	85D026

e. Radiographic Examination Procedure Review (57090)

The below listed PPP and NISCO radiographic procedures were reviewed to ascertain whether they had been issued and approved in accordance with the licensee's/contractor's QA program and to ascertain whether these variables are controlled within the limits specified by the applicable code or specification requirements.

<u>Procedure No.</u>	<u>Title</u>	<u>Latest Rev. Date</u>
PPP IX-RT-1-W77	Radiographic Procedure IR-192 Butt Welded Pipe Winter 1977 Addenda	7-25-86
NISCO ES-8.7	Radiographic Examination of Production Welds and Welder/ Welding Operator Qualification	7-30-86 (R-D)

In addition to the review above, the procedures were analyzed in the area of technical content relative to material and weld surface condition requirements, types of material to be radiographed, material thickness range, type of radiation source, film brand or type, minimum source to film distance, blocking or masking technique, type and thickness of intensifying screens and filters, exposure conditions for procedure qualification, radiographic film processing requirements, quality of radiographs, film density limits for single and composite viewing, system of radiograph identification, use of location markers, record for showing film and source location with reference to the part being radiographed, use of intensifying screens, methods of testing for backscatter, material type and thickness restrictions for isotope radiography, geometrical unsharpness limitations, selection and use of penetrameters, radiographic technique requirements for double wall viewing, qualification of radiographic procedure, requirements for evaluation and disposition of radiographs, and records requirements.

Within the areas examined, no violations or deviations were identified.

7. Inspector Followup Items (IFI) (92701B)

(Closed) IFI 50-424/86-59-15: "Heat Trace" - This item identified activated but not installed heat trace cables adjacent to the Unit 1 containment personnel hatch and adjacent to air handling unit A-1542-N7-001-000. The licensee investigated the identified problem and has determined that in both areas of the subject finding, temporary heat sources were removed from electrical items upon completion of the required Construction Maintenance Program and just prior to or during respective system walkdowns. The temporary heat tape was apparently not immediately removed from the respective areas, and was punchlisted for subsequent removal. The inspector has no further questions regarding this matter.